

NATURAL BRIDGES NATIONAL MONUMENT

1) Re-evaluation of Long-Term Monitoring Populations of the Kachina Daisy Populations in Natural Bridges National Monument.

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Name of institution represented: Brigham Young University

Purpose of study

The research is a follow-up to studies on the ecology, genetics, and reproductive biology of the Kachina daisy (*Erigeron kachinensis*). The principle investigator will assess size-specific mortality, growth, and reproductive success across six natural populations of the species in NBNM. Any vegetative community and abiotic changes in the populations will be determined through comparison of data with earlier studies.

2) Effects of Cattle Grazing and Fire on the Birds of Pinyon-Juniper Woodlands

Name of principal investigator: Scott Schlossberg **Email:**
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Name of institution represented: University of Illinois At Urbana-Champaign

Purpose of study

Fire suppression and the introduction of large grazers have dramatically altered the disturbance dynamics of ecosystems in western North America. Apart from how these disturbances affect soils and vegetation, little is known about how fire and cattle grazing impact wildlife (1). The purpose of my study is to understand

how birds respond to altered disturbance regimes in southwestern pinyon-juniper woodlands. Prior to the 1860's, these woodlands were open savannas, maintained by frequent low-intensity fires (2). Since that time, cattle grazing and fire suppression have allowed trees to colonize formerly open areas (3). Consequently, pinyon-juniper woodlands today are more like forests than savannas, with closed canopies and unproductive understories. Furthermore, unnaturally high tree densities have lead to intense fires that destroy all vegetation (4). Such major changes in habitat structure and productivity are likely to have significant effects on wildlife. My proposed research will examine the nature of those effects.

This summer, I will census birds in pinyon-juniper woodlands on the southern Colorado Plateau to estimate densities and habitat preferences of breeding species. Sites will range from pristine, ungrazed woodlands to areas that have been grazed for decades and will include areas with varying histories of recent fire. Study plots will be located within 1000-ha or larger tracts of pinyon-juniper woodland selected using GAP analysis databases. On each plot, I will estimate bird densities using point counts, and I will measure vegetation to describe the habitat used by individual bird species as well as the overall conditions of the habitat.

As an additional measure of habitat quality, I will compare relative food abundance for a few focal species in areas with different disturbance histories. I will combine data that I collect on the foraging locations and food items selected by birds with measurements of food (seed and arthropod) abundance in the environment to determine relative food availability for each species. Food abundance data can be combined with vegetation data to identify important habitat features for different bird species.

This project will have significant implications for the conservation of pinyon-juniper birds. Quantitative descriptions of birds' habitats may be used to suggest management practices to benefit individual species. Moreover, assessment of how grazing and fire influence bird abundances will provide valuable information on how these disturbances affect bird species. In summary, this research will provide crucial baseline data for the conservation and management of the pinyon-juniper woodland avifauna.

HOVENWEEP NATIONAL MONUMENT

1) Floristic Study of Hovenweep National Monument.

Name of principal investigator: Charles Schelz **Email:**
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Name of institution represented: National Park Service

Purpose of study

To obtain a complete list of plants at each unit of Hovenweep National Monument. Plant communities will be defined and mapped. Provide biological inventory data on vascular plants in parks of the Northern Colorado Plateau Inventory and Monitoring Network

2) Biological inventory of National Parks on the Northern Colorado Plateau – Amphibians and Reptiles.

Name of principal investigator: Erika Nowak **Email:**
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Name of institution represented: Northern Arizona University

Purpose of study

Provide biological inventory data on vertebrate animals and vascular plants in

parks of the Northern Colorado Plateau Inventory and Monitoring Network. This proposal addresses the inventory of reptiles and amphibians at HOVE.

3) Biological inventory of National Parks on the Northern Colorado Plateau - Mammals.

Name of principal investigator: Mike Bogan **Email:**
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Name of institution represented: U.S. Geological Survey

Purpose of study

Provide biological inventory data on mammals in parks of the Northern Colorado Plateau Inventory and Monitoring Network. This proposal addresses the inventory of mammals at HOVE.